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TABLE OF CONTENTS

| | | | |
|--|-----------|---|-----------|
| Letters to NAUG | 2 | My Favorite Macro | 29 |
| <ul style="list-style-type: none">• Z-Ram Ultra clock and AppleWorks.• Epson printers and AppleWorks 3.0.• Why there is "garbage" in word processor files.• Control codes for 24 printer interface cards. | | <ul style="list-style-type: none">• An enhanced word processor marker system. | |
| Software Review | 5 | AppleWorks News | 30 |
| <ul style="list-style-type: none">• ReportWriter: A powerful data base tool. | | <ul style="list-style-type: none">• ReportWriter 2.2, RAM 4000, EuroWorks 3.0, new SCSI card, and one year Apple warranty. | |
| Novice Notes | 12 | NAUG News | 31 |
| <ul style="list-style-type: none">• How to prepare your first spreadsheet — Part 3. | | <ul style="list-style-type: none">• AppleWorks GS 1.1 update offer. | |
| Printer Primer | 22 | Public Domain Update | 32 |
| <ul style="list-style-type: none">• How to improve the output from your ImageWriter. | | <ul style="list-style-type: none">• RamDisk Tutor, MLI 3.0, and TAWUG disks added to NAUG's Public Domain Library.• New catalog now available. | |
| Quick Tip | 23 | Members Helping Members | 34 |
| <ul style="list-style-type: none">• Turn off your IIGs print buffer. | | <ul style="list-style-type: none">• More than 90 members who offer help with hardware and printers. | |
| AppleWorks GS | 25 | Electronic Index Disk Update | 35 |
| <ul style="list-style-type: none">• AppleWorks GS 1.1 review — The word processor.• Tips for using the AppleWorks GS word processor. | | NAUG Membership | 36 |
| | | Commercial Advertising | 36 |
| | | NAUG Classifieds | 36 |

Support for AppleWorks and ///EZ Pieces Users

Z-Ram Ultra Clock and AppleWorks

Dear Cathleen,

I am writing to describe how to get AppleWorks to recognize and display the clock built into Applied Engineering's Z-Ram Ultra II and Ultra III memory cards for the Apple IIc.

These models of the Z-Ram Ultra card come with a clock driver program that lets ProDOS recognize the clock on the card. You can copy the program file AECLK.SYSTEM onto any ProDOS program disk, including your AppleWorks disk. After running the program, ProDOS will automatically date and time stamp each file you save on a disk.

Unfortunately, AppleWorks will not display the time on the screen, even after you run the clock driver program. That is because unpatched versions of AppleWorks do not display the time from any clock on the screen; you must modify AppleWorks to get the clock display.

The AE Clock Utilities Disk that comes with the Z-Ram card has an option that patches AppleWorks 2.0 or 2.1 to display the date and time in place of the "Apple-? for Help" message. Unfortunately, that patch is not compatible with AppleWorks 3.0. However, AppleWorks 3.0 users with TimeOut Ultra-Macros or with SuperPatch 6.1 can use those programs to display the time on the AppleWorks screen.

Even after you patch AppleWorks, you still need to run the clock driver program each time you turn on the computer or do an Open-Apple-Control-Reset to warm boot the system.

Steve Beville
Spartanburg, South Carolina

[Ed: See Bruce Condit's letter in the January 1990 issue of the AppleWorks Forum for step-by-step directions describing how to install AECLK.SYSTEM on your AppleWorks disk.]

The **National AppleWorks Users Group (NAUG)** is an association that supports AppleWorks users. NAUG provides technical support and information about AppleWorks and enhancements to that program. Our primary means of communicating with members is through the monthly newsletter entitled the **AppleWorks Forum**.

Epson Printers and AppleWorks 3.0

Dear Cathleen,

I was having problems using the Epson LQ800 printer with AppleWorks 3.0 running from my hard disk. So I started again. This time I removed the ImageWriter from the Printer Menu on my backup copy of the original AppleWorks disk. Then I copied AppleWorks onto the hard disk and installed three custom printers including italics, superscripts, and normal. Now everything performs beautifully.

Alfred Barnard
Reston, Virginia

[Ed: A bug in AppleWorks 3.0 can cause problems if you remove the original ImageWriter from the Printer Menu. Mark Munz and Randy Brandt's AppleWorks 3.0 Patch Disk fixes this problem and lets you remove the original ImageWriter and add up to three printers of your own choosing. If you use AppleWorks 3.0, I suggest that you modify your working copy of the program with the latest version of the Patch Disk. (The AppleWorks 3.0 Patch Disk is available from NAUG's Public Domain Library or can be downloaded from NAUG's Electronic Forum bulletin board. Version 1.4 is current.) If you do not want to patch your copy of AppleWorks 3.0, I suggest that you leave the original ImageWriter on the Printer Menu and add no more than two printers to your copy of AppleWorks.]

AppleWorks Forum

Editor: Cathleen Merritt

Associate Editor: Warren Williams

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Letters...

Why There Is “Garbage” in Word Processor Files

Dear Cathleen,

One of my students brought me a word processor file with what looks like a tab ruler line and all sorts of unwanted text in the document (see *Figure 1*). What causes these unwanted characters and how can I get rid of them?

Bert Greene
Ypsilanti, Michigan

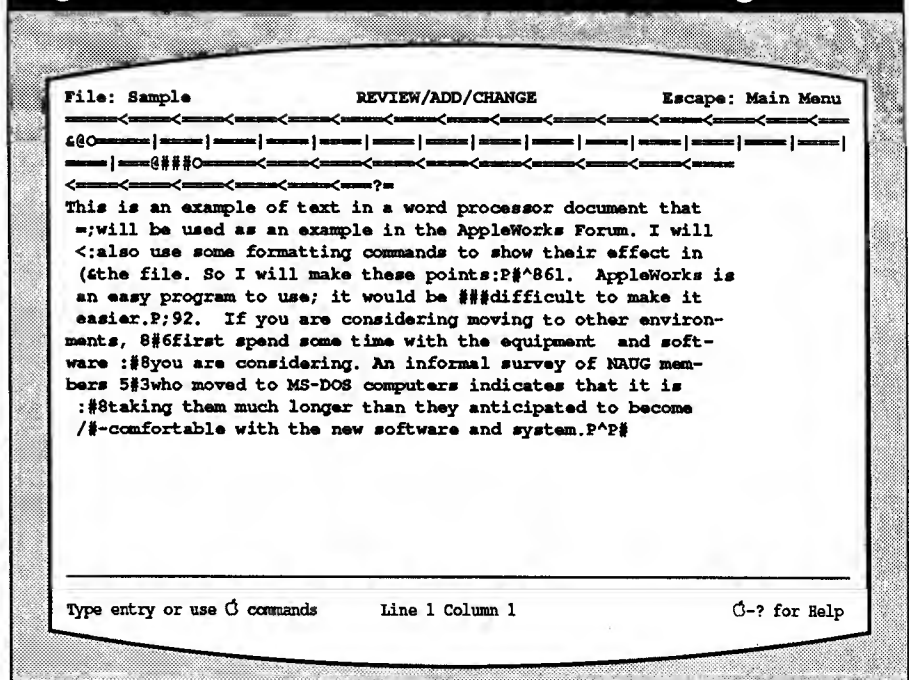
[Ed: Here is the most likely scenario that caused this problem:

1. The student created the word processor document and saved it with an Apple-S. That stored the document as an AppleWorks word processor file on the disk. Word processor files include a header with information about the file, the text, and the formatting commands added to the file by AppleWorks.
2. The next time the student needed the file, he told AppleWorks to "Create a new file from a text (ASCII) file" and specified the word processor file on the disk. AppleWorks thought it was loading ASCII characters onto the desktop, so it treated the header and formatting commands as text. That is why you have the unwanted characters interspersed with the text throughout the file.
3. The student realized he was in trouble, so he did an Apple-S and saved the file in word processor format with all the embedded "garbage". This over-wrote the original word processor file which is now no longer available on the disk.

Thus, what appears on the disk he gave you is an AppleWorks word processor file that contains text, formatting commands, and characters from the header.

Unfortunately, there is no way to automatically eliminate all the extra characters. The easiest ap-

Figure 1: Word Processor File with Garbage



proach is to use AppleWorks' Replace Command to remove the unwanted characters. For example, follow these steps to delete all the extra equals signs:

1. Issue an Apple-1 to put the cursor at the beginning of the document.
2. Issue an Apple-R command to invoke the Replace function.
3. Press the Return Key to indicate that you want to replace "text".
4. Respond to the "Replace what?" prompt by typing an "=" to indicate you want to replace all equals signs. Press the Return Key.
5. Respond to the "Replace with what?" prompt by pressing the Return Key. That says you want to replace the equals signs with nothing... a round-about way of saying that you want to delete the equals signs.
6. Press the "A" key to indicate you want to replace "All" the equals signs.

You should repeat this process for each unwanted character that appears frequently within the document. Even then, you will have to go through the document and manually remove other characters inserted by AppleWorks.

Letters...

You will also have to be patient; it takes quite a few seconds to replace the unwanted characters in a long document.]

Control Codes for Dumping GX Interface Card

Dear NAUG:

I had problems printing in condensed mode with my Panasonic printer. The printer would print 80 characters on a line and go onto the next line, leaving a wide right margin on each line. The problem turned out to be the AppleWorks interface card setting for my Dumping GX printer interface card. I changed the setting from Control-I 80N (the default) to Control-I 136N. Now I can print up to 136 characters on a line when I choose.

Rex Lauber
Ward Cove, Alaska

[Ed: Thanks for the Dumping GX settings, Rex. As you've learned, some printer interface cards are not fully Apple Super Serial Card compatible and need settings other than AppleWorks' default of Control-I 80N. The most common other settings are <NONE>, Control-I 0N, and Control-I 255N.

On the Dumping GX, the number you enter after Control-I tells the card the maximum number of characters to allow on a line. If you enter Control-I 136N as the interface card setting, the Dumping lets you print up to 136 characters on each line. Since AppleWorks does a good job of sending line feed commands when it needs a new line, we recommend that you enter the code Control-I 255N. That tells the Dumping card to allow up to 255 characters on a line, thus effectively turning control of line lengths over to AppleWorks.

A fairly complete list of interface card settings appears in Figure 2.]

Moving?

Please let NAUG know six weeks in advance of your move to avoid missing a single issue of the *AppleWorks Forum*. Send your address change to: NAUG, Box 87453, Canton MI 48187.

Figure 2: Interface Card Settings

| Interface Card | AppleWorks Setting |
|-------------------------------|----------------------|
| Apricorn Graphic Printer Card | Control-I 0N |
| Apricorn Super Serial Imager | Control-I 80N |
| Apricorn Serial Interface | NONE |
| Apricorn PrinterPro | NONE |
| Apricorn Parallel | NONE |
| Apple Parallel Card | Control-I 80N |
| Apple Super Serial Card | Control-I 80N |
| Apple Centronics Parallel | Control-I 255N |
| Dumping GX | Control-I 255N |
| Fourth Dimension | Control-I 80N |
| GraphStar | Control-I 0N |
| Grappler Plus | Control-I 0N or NONE |
| Microbuffer | Control-I 0N or NONE |
| Microbuffer II+ | Control-I N |
| Micro Tec RV-611C | Control-I 255N |
| MPC AP Graph/GraphWriter | Control-I 255N |
| Pkaso | Control-I 0N |
| Print Link | Control-I 100N |
| Printex II | NONE |
| Prometheus | Control-I 255N |
| ProGrappler | Control-I 0N or NONE |
| Tymac PPC100 | Control-I 80N |
| Tymac Tracker Parallel Card | Control-I 0N |
| Wizard | Control-I J |

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ReportWriter: A Powerful Data Base Tool

by Gary Fletcher

TimeOut ReportWriter is a powerful AppleWorks enhancement that lets you combine data from up to 11 AppleWorks files into a single report. You can use ReportWriter to produce invoices, profit and loss statements, inventory reports, individualized educational programs, and any other document that requires you to combine data stored in different AppleWorks word processor, data base, and spreadsheet files.

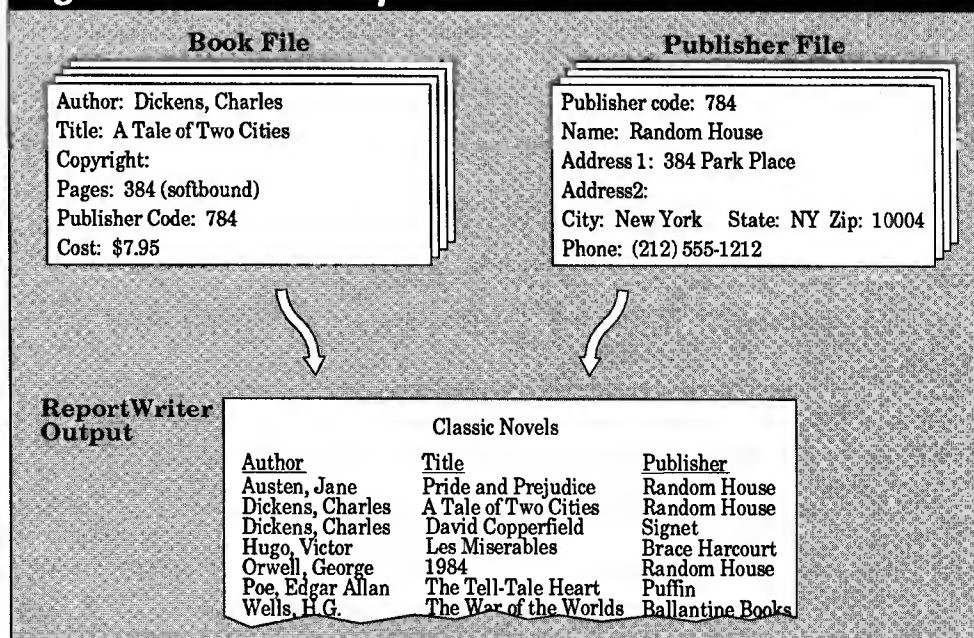
Like all TimeOut modules, ReportWriter requires AppleWorks 2.0 or later and runs on any Apple IIe, IIC, IIC Plus, IIGS, or Laser computer with at least two 5.25-inch disk drives or one 3.5-inch drive and 128K of RAM.

ReportWriter versions 2.0 and later include two TO.REPORTWRITER files, one for AppleWorks 2.0 and 2.1, and one for AppleWorks 3.0. Once you install TimeOut in your working copy of AppleWorks and copy the appropriate TO.REPORTWRITER file onto an applications disk, you can invoke ReportWriter by pressing an Open-Apple Escape from anywhere within AppleWorks.

Relational Reporting

ReportWriter can produce reports that combine data from separate but "related" files. "Related" files are two or more files that share a common category that "links" the files. Consider the following example:

Figure 1: Relationship between the Files



Imagine a library with 15,000 books published by 500 publishers. The AppleWorks data base you use to store data about the books has 15,000 records, one for each book. Without ReportWriter, you must enter and store the publisher's name, address, and telephone number in each record. That requires a significant amount of desktop and disk space.

Now imagine creating two related files, called the Book File and the Publisher File. The Book File contains information about each book including the author, title, copyright date, and price. This file contains 15,000 records, one for each book.

The Publisher File contains information about each publisher, including the publisher's name, address, and telephone number. This file contains 500 records, one for each publisher.

Figure 2: Simple Report Produced with ReportWriter

BOOK BIOGRAPHY REPORT
Local Library

Date: 04/03/90

| BOOK NAME | AUTHOR | PUB CODE | PUBLISHER | CITY |
|-------------------------------|-----------------|-------------|-------------------|---------------|
| Among School Children | Tracy Kidder | 0458 | Houghton Mifflin | San Francisco |
| Chaplin | Roger Marville | 0130 | Little Brown | San Francisco |
| Education In The U.S. | Robert L Church | 0145 | Free Press | Los Angeles |
| Financing a College Education | Judith Mangoin | 0316 | Plenum Press | New York |
| Gathering of Saints | Robert Lindsey | 0192 | Simon & Schuster | New York |
| Goldwyn | Arthur Marx | 0143 | Norton Publishers | New York |
| Growing Up In America | Fred Hechinger | 0156 | McGraw Hill | Chicago |

THIS REPORT PREPARED BY REPORTWRITER USING TWO DATABASES

PAGE 1

Both files contain a category called Publisher's Code. Adams Publishers could be coded 010, Addison Wesley might be coded 020, and so forth. ReportWriter then lets you generate reports that combine the data from these two files. For example, you can use ReportWriter to print a list of all biographies in the library, including the name of the author, the title, and the publisher. The name of the book and the author would come from the Book File; the publisher's name would come from the Publisher File.

Figure 1 depicts the relationship between the Book File and the Publisher File. Figure 2 shows a sample report that demonstrates ReportWriter's ability to merge data from these two files. Figure 3 depicts a more complex report from another application that shows some of the relational and computational capabilities built into ReportWriter.

While our library example describes an application of ReportWriter, it does not adequately convey the power of the program.

As mentioned earlier, ReportWriter lets you combine data from up to 11 different data base, spreadsheet, and word processor files in each report. Your reports can include up to 250 categories and can use any combination of ReportWriter's 43 numerical, text manipulation, and date functions.

How It Works

Creating a ReportWriter report is a three step process:

1. Design the report.
2. Generate the report.
3. Print the report.

To design a report, you use the ReportWriter Editor to create and save the report design in a Format File. The Format File contains a set of instructions that tell ReportWriter which files to use, what data to retrieve from each file, where to place the data in the report, what mathematical functions to use, and where to print the results of those calculations.

Figure 3: More Complex Report Produced with ReportWriter

SMOKY HILL ROTARY CLUB - 5th Annual Puttin' On The Ritz

BID NUMBER: 1515
 BIDDER NAME: GARY FLETCHER

=====

 BIDDER'S INVOICE

 =====

 May 12, 1990

Yours was the successful bid for the following items:

| Table# | Item Nbr | Item Description | Bid Amount |
|-----------------|----------|-----------------------------|---------------|
| 21 | 340 | MEMBERSHIP PRIVILEGE (1DAY) | \$13.00 |
| 16 | 043 | DINNER CERTIFICATE | \$39.00 |
| 22 | 210 | DRIED FLORAL ARRANGEMENT | \$40.00 |
| LIV | 341 | DAY OF PAMPERIN/PHOTOGRAPH | \$280.00 |
| 8 | 441 | SILK FLORAL ARRANGEMENT | \$21.00 |
| 10 | 432 | HAIRCARE | \$25.00 |
| 11 | 279 | SILK TREE | \$17.00 |
| 14 | 602 | CHAMPAGNE (BOTTLE) | \$8.00 |
| 11 | 111 | WEEKEND LODGING | \$31.00 |
| 12 | 452.01 | LONG LIGHT - PLASTIC | \$6.00 |
| 4 | 518 | DISCOUNT ON PRINTING | \$2.00 |
| 5 | 337 | GORMET DINNERS 2-DELIVERED | \$15.00 |
| Amount Due >>>> | | | \$497.00 <<<< |

THANK YOU FOR JOINING US AT THE RITZ AND SUPPORTING OUR AURORA YOUTH PROGRAMS
 Page 34

You save the Format File on disk and use that file to generate the report. For example, *Figure 4* depicts the Format File definitions that generated the report in *Figure 2*.

Power and Complexity

This simple description of the reporting process masks ReportWriter's power and complexity; it takes a significant amount of planning to use the program. The planning process is easier if you think of "applications", "Master Files", and "Lookup Files".

An "application" is the set of tasks you want to accomplish. For example, "Maintain a searchable library card catalog that can list every book and publisher" is an "application".

Each report you generate must have one or more fields that extract data from a "Master File". The Master File contains data for the report and/or lookup references that refer to other files. In our

example, the Master File is the Book File.

"Lookup Files" contain additional data you can include in the report. For example, the Publisher File is a Lookup File; it contains information you want to combine with the Master File when you generate the report.

The Master File and each Lookup File must contain a "link", a category shared by both files. ReportWriter uses the data in that category to match the records in the two files when it prepares the report. In our library example, the Master File and Lookup File both contain a Publisher Code category, thus ReportWriter can find the appropriate publisher's record in the Publisher File each time that code appears in the Book File.

Format Files

As mentioned earlier, each report is controlled by a Format File which contains up to seven sections. The "Title Section" contains a title that will print at

Figure 4: ReportWriter Format File

File: BIOG.REPORT EDITOR Escape: Main Menu

BOOK BIOGRAPHY REPORT Revision Date

| Book Name | Author | Pub Code | Publisher |
|-----------|--------|----------|-----------|
| ***** | ***** | ***** | ***** |

Type entry or use ⌘ commands Line 2 Column 1 ⌘-? for Help

Other Features

ReportWriter includes a complete set of numerical and text manipulating tools you can use to prepare a report. These include 16 numerical functions that compute averages, sums, square roots, and rounded numbers, 10 text manipulation functions that find text, capitalize first letters, and concatenate two or more text strings, 12 date functions that perform date calculations, and 7 additional functions that control the reporting process.

ReportWriter also supports a Post Command that combines data from one file into another file. This is a powerful command with numerous applications. For example, you can use the Post Command to subtract items sold from an inventory file or to add test scores into a student

record file. You can also use the Post Command to add new records to an existing file or to create a new file that combines data from up to 11 other files. In experienced hands, this is an important, powerful feature of the program.

Ease of Use

While the mechanics of using ReportWriter are not difficult to master, the logic necessary to develop a Format File can be complex. The real challenge of ReportWriter is to conceptually understand the relationships between files, and how to use those relationships for your reports. Most users will master the commands easily; but it takes study and practice to be able to design practical applications and useful reports.

In addition, ReportWriter is not intuitive, and the program can be intimidating to the first-time user. You must study the manual to learn the program. And you must expect frustration, a lot of trial and error, and some problems as you generate your first report. Once you master the program, the logic and operations are reasonable. However, if you do not develop formats on a regular basis, you can expect the trial and error process to continue.

In all fairness to the developer, I cannot think of any way to make the program easier to use. Report-

the beginning of the report. The "Header Section" contains text or data that will print at the top of every page. The "Report Body" contains data abstracted from the Master File and Lookup Files and the results of any calculations you want to perform on those data. (In our library example, the Report Body contains the information about each book.) The "Subtotal Section" contains totals for the records on the current page. The "Closing Section" contains text or data that will print at the end of the report. Finally, the Format File includes a non-printable "Work Area" where you perform any necessary intermediary calculations.

Preparing a Format File to generate a report is a two-step process. First, you use the ReportWriter Editor to prepare a Format File like the example in Figure 4.

You tell the Format File Editor where you want to print each field; the Editor generates asterisks to mark each field's position. Then you define the contents of each field, which can contain data from the Master File, data from one of up to ten Lookup Files, or calculated data from the Work Area. Your report can also include text you enter into the Format File. It is this definition process that gives ReportWriter much of its power ... and its complexity.

Software Review...

Writer is a well-designed, powerful product. But that will offer little relief to the first-time user who is trying to generate his or her first report.

I rate the program as "complex" and cannot recommend it to the novice AppleWorks user or users who are too impatient to read documentation or study this powerful product.

Documentation

ReportWriter includes a 160-page, fully indexed manual that describes how to install and use the program. The manual includes a short introduction to relational reporting and a 25-page tutorial to help generate your first report.

The documentation and the examples on the ReportWriter disk provide only the basic information you need and do not go into sufficient depth to make you comfortable with the program. That comfort only comes with persistence and practice.

Some of the documentation is confusing for a new user. For example, I asked a user who had never heard of relational reporting to read the "Introduction to Relational Reporting" section in the manual. At the conclusion of that section, the reader had a better, but still very basic understanding of relational reporting.

The section on "Advanced ReportWriter Features" only scratches the surface of the advanced applications of ReportWriter and describes the most elementary of the "advanced" features. The format files on the ReportWriter disk are also basic, but these examples help you learn the logic of the program's functions.

I believe that the program would benefit from a disk filled with report templates that take the user from a beginner's point of view through various stages of complexity. To the author's credit, the latest version of ReportWriter comes with additional examples, including applications that demonstrate how to use the program to generate printed checks.

In summary, ReportWriter's 160 pages of documentation makes it the most comprehensive of the TimeOut manuals. However, the powerful, flexible nature of the program begs for a comprehensive

third-party textbook that describes all the nuances and possible applications of this program.

Support

You can get four levels of technical support for ReportWriter. First, you can call Beagle Bros' Technical Support Department at (619) 452-5500. Getting through the busy signals and holds sometimes requires patience, but once they answer, the help is friendly, to the point, and accurate.

You can also fax a description of your problems to Beagle's Technical Support group (the fax number is (619) 452-6374). I used the fax method three or four times and always received a response within 24 hours.

Third, you can use the Beagle Buddy system to get updates to your TimeOut disks and get help with some applications. However, you cannot expect your Beagle Buddy to be expert with every TimeOut program and application; the quality of the help you get will depend on the experience of your local Buddy.

Finally, NAUG members can get help from 15 volunteer-consultants who offer free telephone support for ReportWriter. *[Ed: See the Members Helping Members section in the December 1989 issue of the AppleWorks Forum for a list of volunteers who offer telephone support for this product.]*

Value

At its suggested retail price of \$79.95, ReportWriter represents an excellent value for anyone needing more powerful reporting capabilities than those built into AppleWorks. The only competition for ReportWriter comes from significantly more expensive stand-alone relational data base programs like DB Master. While these programs are more powerful than ReportWriter, they require that you leave the easy-to-use comfort and wide acceptance of AppleWorks.

Conclusion

ReportWriter is a powerful, complex product that adds significant reporting capability to AppleWorks. The program is not easy to learn and is not for AppleWorks beginners or users who lack the

Software Review...

time and motivation necessary to learn its functions and nuances. But those who master this program will be impressed by how it expands the power of AppleWorks. Anyone who is comfortable with and regularly uses the AppleWorks data base and/or spreadsheet modules should consider ReportWriter.

[TimeOut ReportWriter lists for \$79.95 from Beagle Bros, 6215 Ferris Square, Suite 100, San Diego, California 92121. Outside California: (800) 345-1750. In California: (800) 992-4022. The program is also available at significant discounts from mail order dealers.]

[Gary Fletcher is a sales executive with Moore Business Forms and Systems and is editor of the monthly newsletter produced by the C.A.C.H.E. Apple Users Group in Denver, Colorado.]

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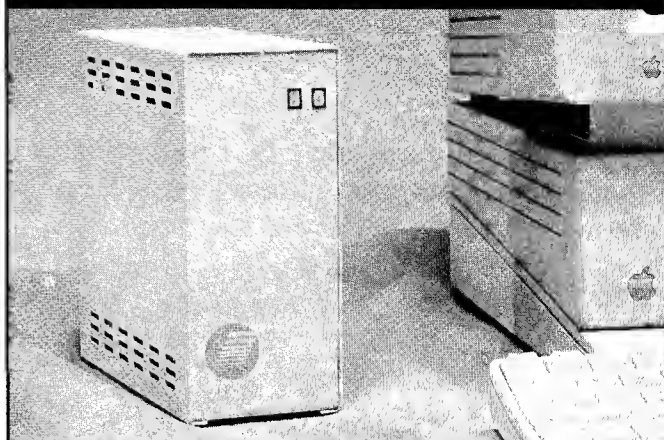
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How to Prepare Your First Spreadsheet—Part 3

by Warren Williams and Cathleen Merritt

This is the third in a series of articles designed to help novices use AppleWorks' spreadsheet module. This article describes how to design and develop a spreadsheet template. While the article is intended for spreadsheet novices, accomplished developers should examine the article for ideas that might enhance their spreadsheet templates.

The first two articles in this series described different applications for spreadsheets, explained the concept of a template, and described how to enter labels and formulas into a spreadsheet. Now we present the first of four articles that will use those concepts to develop a practical spreadsheet model, a teacher's gradebook. You should be able to generalize the techniques we describe in these articles to other spreadsheet applications.

An Overview

This month we will describe (a) keystrokes and commands that let you navigate around an AppleWorks spreadsheet, (b) how to diagram a spreadsheet model, (c) how to enter sample data into a spreadsheet, (d) how to change column widths, and (e) how to enter column headings.

Figure 1 depicts the spreadsheet you will prepare in these exercises. The gradebook accommodates three test scores and four homework scores for each student. The tests determine 60% of each student's grade, the homework scores determine the remaining 40% of each grade.

Navigating around the Spreadsheet

It is obvious that the gradebook model in Figure 1 is larger than the spreadsheet you developed in last month's lesson. We will start by describing five ways to move the cursor around a large spreadsheet model. Boot up AppleWorks, load the SHARES spreadsheet you developed last month onto the desktop, and try each of these techniques.

Arrow Keys: The Arrow Keys move the cursor from cell to cell. Hold down the key and the cursor will scroll quickly in the direction of the arrow. This is the method you used to navigate around the spreadsheet last month.

Apple-Arrow: Hold down the Open-Apple Key and press the Right-Arrow Key and the cursor will jump to the edge of the screen. Enter another Apple-Right-Arrow and the cursor will jump to the right hand edge of the next screen. You can use the Apple-Arrow Key combination to jump the cursor a full screen at a time.

Hold down the Open-Apple Key and press the Left-Arrow Key until the cursor returns to column A. Then experiment using the Open-Apple Down-Arrow and Up-Arrow Keys to move from screen to screen.

Apple-1/Apple-9: The Apple-1 key combination tells AppleWorks to move the cursor to the top of the spreadsheet. Apple-9 jumps the cursor to the bottom of the spreadsheet. You can use the combination of the Apple Key and any number key to jump proportionally to any row in the spreadsheet.

Enter an Apple-9 and the cursor will move to row 7, the bottom row of the SHARES spreadsheet. Enter an Apple-1 and the cursor will return to row 1.

Find Coordinates/Text: The Apple-F command gives you two ways to move the cursor around the spreadsheet. You can tell AppleWorks to jump to any cell by selecting the "Coordinates" option in response to the "Find?" prompt; the cursor will jump

Novice Notes...

to the cell you specify.

Try that now: Enter an Apple-F and find the coordinates B7 (the cell that contains the formula that calculates the value of your stock holdings). The cursor will jump to that cell.

You can also use the Find Command to jump to any cell containing a string of characters you specify. The Find Command only finds text from the current cursor position to the bottom of the spreadsheet, so you should issue an Apple-1 command to position the cursor at the top of the spreadsheet before typing an Apple-F. Also note that you cannot use Apple-F to find numeric entries (values) in a cell.

Try that now: Issue an Apple-1 to position the cursor at the top of the screen, then issue an Apple-F command and select "Text" in response to the "Find?" prompt. Enter the word "value" as the text to find (do not type the quotation marks) and press the Return Key. The cursor will jump to cell A7.

The Find Command is a quick way to jump to any cell or text in your spreadsheet model.

Apple->/Apple-<: AppleWorks 3.0 offers two navigational commands not available in earlier versions of AppleWorks. Apple-Period (the Period Key also displays the ">" symbol) jumps the cursor to the right-hand-most column in the spreadsheet. Apple-Comma (which contains the symbol "<") jumps the cursor to column A.

If you are using AppleWorks 3.0, hold down the Open-Apple Key and press the Period Key. The cursor will jump to column B, the right-most col-

Figure 1: Gradebook Spreadsheet

| Semester: Winter '90 | | | | | | | | | | | | | |
|---------------------------------------|------------|-------|------|------|----------|-----|-----|-----|---------|--------|--------|-------|--|
| Class: English--Period 1 | | | | | | | | | | | | | |
| Last Name | First Name | Tests | | | Homework | | | | Average | | Weight | Final | |
| | | 1 | 2 | 3 | 1 | 2 | 3 | 4 | Tests | Homewk | Avg. | Grade | |
| Behling | Larry | 75 | 95 | 88 | 100 | 98 | 75 | 75 | 86.0 | 91.0 | 88.0 | B | |
| Bone | David | 100 | 95 | 100 | 100 | 94 | 98 | 98 | 98.3 | 97.3 | 97.9 | A | |
| Cazabon | Sandy | 98 | 92 | 95 | 100 | 98 | 100 | 100 | 95.0 | 99.3 | 96.7 | A | |
| Crysler | Barbara | 80 | 90 | 85 | 100 | 85 | 90 | 90 | 85.0 | 91.7 | 87.7 | B | |
| Dawson | Charlie | 100 | 98 | 95 | 100 | 95 | 90 | 90 | 97.7 | 95.0 | 96.6 | A | |
| Doll | Jordan | 75 | 85 | 100 | 100 | 98 | 82 | 82 | 86.7 | 93.3 | 89.3 | B | |
| Donell | Mike | 85 | 90 | 96 | 94 | 80 | 65 | 65 | 90.3 | 79.7 | 86.1 | B | |
| Everson | Gordon | 95 | 85 | 96 | 100 | 87 | 95 | 95 | 92.0 | 94.0 | 92.8 | A | |
| Farrell | Cheryl | 65 | 89 | 96 | 98 | 78 | 95 | 95 | 83.3 | 90.3 | 86.1 | B | |
| Galesky | Belinda | 80 | 97 | 100 | 100 | 79 | 95 | 95 | 92.3 | 91.3 | 91.9 | A | |
| Grover | Robin | 73 | 80 | 68 | 80 | 74 | 82 | 82 | 73.7 | 78.7 | 75.7 | C | |
| Heinz | George | 100 | 99 | 100 | 100 | 100 | 100 | 100 | 99.7 | 100.0 | 99.8 | A | |
| Kerr | Jackie | 70 | 90 | 80 | 95 | 80 | 87 | 87 | 80.0 | 87.3 | 82.9 | B | |
| Lambert | Karen | 89 | 75 | 70 | 90 | 85 | 87 | 87 | 78.0 | 87.3 | 81.7 | B | |
| Lukasik | Patty | 70 | 75 | 70 | 80 | 75 | 90 | 90 | 71.7 | 81.7 | 75.7 | C | |
| Peyton | Stan | 87 | 89 | 95 | 75 | 70 | 85 | 85 | 90.3 | 76.7 | 84.9 | B | |
| Roush | Jack | 87 | 95 | 80 | 100 | 95 | 97 | 97 | 87.3 | 97.3 | 91.3 | A | |
| Wells | Jack | 100 | 100 | 99 | 100 | 100 | 100 | 100 | 99.7 | 100.0 | 99.8 | A | |
| Wolf | Karen | 95 | 98 | 100 | 100 | 100 | 98 | 98 | 97.7 | 99.3 | 98.3 | A | |
| Woods | Larry | 65 | 75 | 60 | 85 | 90 | 75 | 75 | 66.7 | 83.3 | 73.3 | C | |
| Average = | | 84.5 | 89.6 | 88.7 | | | | | 87.6 | 90.7 | 88.8 | | |
| ***** | | | | | | | | | | | | | |
| ** Lowest test average = 66.7 ** | | | | | | | | | | | | | |
| ** Highest test average = 100.0 ** | | | | | | | | | | | | | |
| ** | | | | | | | | | | | | | |
| ** Lowest homework average = 76.7 ** | | | | | | | | | | | | | |
| ** Highest homework average= 100.0 ** | | | | | | | | | | | | | |
| ** | | | | | | | | | | | | | |
| ** Lowest final average = 73.3 ** | | | | | | | | | | | | | |
| ** Highest final average = 99.8 ** | | | | | | | | | | | | | |
| ***** | | | | | | | | | | | | | |

umn in this spreadsheet. Enter an Open-Apple-Comma and the cursor will jump to column A.

If you use AppleWorks 3.0, the combination Apple-1 followed by Apple-< always brings you to cell A1. The combination Apple-9 followed by Apple-> always takes you to the lower right-hand corner of the spreadsheet.

Building the Gradebook

Now that you can navigate around the spreadsheet, you will start to develop the gradebook template; a blank gradebook with all the necessary format, labels, and formulas, but no names and grades. Then you can re-use the model whenever you need a new gradebook. (If you enter data into the original gradebook, you have to delete the data to reuse the spreadsheet with other classes.) Figure 2 depicts the

Figure 2: Gradebook Template

[illegible]

final template you will develop in this series of exercises. Any time you need a new gradebook, you will load the gradebook template on the desktop, change the name of the spreadsheet file, and enter names and scores for your new class into the model.

Note the following differences between the completed gradebook in *Figure 1* and the template in *Figure 2*:

1. The gradebook includes names, scores, and grades. The template includes all the headings, formulas, and formatting, but no data. By creating templates without data, you can use the

same template for every class
each semester.

2. The template in *Figure 2* has more rows to accommodate data than were used in the gradebook in *Figure 1*. You should always create “oversize” templates that can accommodate more data than you would ever want to enter into the spreadsheet model. It is always easier to delete rows or columns than to add cells to an existing model.
3. The template in *Figure 2* displays the word “ERROR” in many cells that contain formulas.

Without the necessary data, AppleWorks is unable to calculate a value in those cells, so the program generates an ERROR warning until you enter the necessary data. Then AppleWorks replaces the ERROR message with the results of the calculation. Advanced users can eliminate these messages (see the Spreadsheet Tip entitled "How to Manipulate Text in AppleWorks 3.0" in the August 1989 issue of the *AppleWorks Forum*), but those techniques are beyond the objectives for this series of introductory articles.

Draw a Model

As with all complex spreadsheets, you should start by using paper and pencil to draw a model of the gradebook. Spreadsheets often do not fit on a single AppleWorks screen, so it is difficult to keep the total picture in mind as you work. The sketch will make it easier to keep an overall view of the spreadsheet model; you will be surprised how often you look at this sketch as you work. Remember that you frequently have only a general idea of the structure of the final product when you begin to design the template.

Figure 3: Gradebook Sketch

| Semester: | | Class: | | | | | | | | | | |
|-----------|------------|--------|---|---|----------|---|---|---|---------|----------|--------------|-------------|
| Last Name | First Name | Tests | | | Homework | | | | Average | | Weighted Avg | Final Grade |
| | | 1 | 2 | 3 | 1 | 2 | 3 | 4 | Tests | Homework | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| Average= | | | | | | | | | | | | |

Figure 3 presents a sketch of the model you will develop in this exercise. This figure demonstrates the application of two techniques that give you more flexibility when you design a spreadsheet. First, note that we occasionally split long column headings into two cells, one above the other. (For example, note the two cells used for the words "Final Grade".) While this approach uses an extra row, it lets you narrow the columns and keeps the spreadsheet more compact. That makes the spreadsheet easier to read on the screen, easier to print on a single page, and easier to navigate.

Also note that we put each student's first and last names in separate columns. If you ever developed a name and address data base file, you know the basis for that decision. Separating students' first and last names lets you use the Apple-A command to arrange the records in order by last name and lets you print the data with last name first or first name first.

Set Column Widths Early

One of the tricks to developing a spreadsheet model is to establish the column widths as early as possible. That lets you enter the headings without retyping and reformatting that section of the template

each time you change the column widths. Therefore, we suggest you start by entering a sample row of data and the column headings. That will let you establish the correct width for each column.

Follow these steps:

1. Get the AppleWorks Main Menu on the screen and indicate that you want to create a new spreadsheet file "From scratch". Name this file "GRADEBOOK".
2. Use the sketch as a guide and enter the sample data that appears in Figure 4 into row 5.

Suggestions for Sample Data

We suggest that you use round numbers for the sample data. Later in the design process, you will enter formulas; you should always check each formula by doing the calculations manually. Using round numbers makes it easier to check the calculations. (Spreadsheets can be seductive because the display is always attractively formatted. It is easy to become complacent about the accuracy of the formulas you enter in the models you develop.)

Also note the entry of "99.9" in place of the calculated values in columns J through L. These entries are "pictures" that depict the largest space needed

Figure 4: Starting with Sample Data

| | | | | | | | | | | | |
|-----------------|--|----|----|----|----|----|----|----|------|------|-------------------|
| File: GRADEBOOK | REVIEW/ADD/CHANGE | | | | | | | | | | Escape: Main Menu |
| 1 | A=====B=====C=====D=====E=====F=====G=====H=====I=====J=====K=====L===== | | | | | | | | | | |
| 2 | | | | | | | | | | | |
| 3 | | | | | | | | | | | |
| 4 | | | | | | | | | | | |
| 5 | Franklin Benjamin | 90 | 90 | 90 | 70 | 70 | 70 | 70 | 99.9 | 99.9 | 99.9 |
| 6 | | | | | | | | | | | |
| 7 | | | | | | | | | | | |
| 8 | | | | | | | | | | | |
| 9 | | | | | | | | | | | |
| 10 | | | | | | | | | | | |
| 11 | | | | | | | | | | | |
| 12 | | | | | | | | | | | |
| 13 | | | | | | | | | | | |
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| 15 | | | | | | | | | | | |
| 16 | | | | | | | | | | | |
| 17 | | | | | | | | | | | |
| 18 | | | | | | | | | | | |

A5: (Label) Franklin

Type entry or use ⌘ commands ⌘-? for Help

by the numbers that will appear in those columns. These pictures provide the information you need to establish column widths, even though you did not yet enter the appropriate formulas.

Enter the Column Headings

The next step is to enter the column headings. The sketch in *Figure 3* suggests you will need two rows for these labels. Proceed as follows:

1. Move the cursor to row 2 and enter the headings "Last" and "First" in cells A2 and B2.
2. Move the cursor to cell A3 and enter the label "Name" into both cells A3 and B3.
3. The next cells in this row should contain the column headings for the different homework assignments and test grades.

Move the cursor to cell C3, type the number "1" and press the Right-Arrow Key.

4. Repeat this process in cells D3 through I3, entering the following characters in each cell:

| Cell | Label |
|------|-------|
| D3 | 2 |
| E3 | 3 |
| F3 | 1 |
| G3 | 2 |
| H3 | 3 |
| I3 | 4 |

5. Look at *Figure 3* and you will see that the remaining cells in this row contain the column headings "Tests", "Homewk", and "Avg." Enter those labels in cells J3 through L3 now.

Center the Column Headings

Since the entries in cells J3 through L3 are labels, they automatically align themselves with the left-hand edge of each cell. The next step is to move these entries to the right-hand edge of cells J3 through L3 so they line up with the numbers in those columns. (We do not recommend centering your headings. AppleWorks right-justifies all numbers. As a result, centered headings do not line up with the numbers.)

6. Move the cursor to cell J3 and issue an Apple-L command to tell AppleWorks you want to change the layout of the spreadsheet.
7. AppleWorks asks which cells you want to change. Press the letter "B" to indicate you want to change the layout of a block of cells. (A "block" is any rectangle of cells.)
8. AppleWorks asks you to highlight the cells you want to include in this block. Press the Right-Arrow Key until you highlight cells J3 through L3, then press the Return Key.
9. Press the letter "L" to indicate you want to

Figure 5: Sample Data with Labels

File: GRADEBOOK

REVIEW/ADD/CHANGE

Escape: Main Menu

| A | B | C | D | E | F | G | H | I | J | K | L | |
|----|----------|----------|----|----|----|----|----|----|----|-------|--------|------|
| 1 | | | | | | | | | | | | |
| 2 | Last | First | | | | | | | | | | |
| 3 | Name | Name | 1 | 2 | 3 | 1 | 2 | 3 | 4 | Tests | Homewk | Avg. |
| 4 | | | | | | | | | | | | |
| 5 | Franklin | Benjamin | 90 | 90 | 90 | 70 | 70 | 70 | 70 | 99.9 | 99.9 | 99.9 |
| 6 | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | |
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| 13 | | | | | | | | | | | | |
| 14 | | | | | | | | | | | | |
| 15 | | | | | | | | | | | | |
| 16 | | | | | | | | | | | | |
| 17 | | | | | | | | | | | | |
| 18 | | | | | | | | | | | | |

A5: (Label) Franklin

Type entry or use ⌘ commands

⌘-? for Help

change the format of the cells that contain labels.

- Press the letter "R" to indicate you want to right justify the labels.

Changing Column Widths

The next step is to adjust the column widths. AppleWorks automatically makes each spreadsheet column nine characters wide, and nine characters is too narrow for the Last Name column and too wide for the columns containing the test scores and homework grades.

- Put the cursor on any cell in column A and issue an Apple-L (for Layout) command. The Layout Command lets you change the format of individual cells or rows, columns, or blocks of cells.
- You want to change the width of a column of cells, so type the letter "C" for "Column". AppleWorks will highlight column A and prompt you to "Use cursor moves to highlight Columns, then press Return". You only want to change one column, so press the Return Key.
- AppleWorks asks what you want to change in column A. Type the letter "C" to indicate "Column Widths" and press the Return Key.
- You change the width of columns by holding down the Open-Apple Key and pressing either

the Right-Arrow or Left-Arrow Key. Each press of the Arrow Key changes the width of the column by one character.

Widen Column A by holding down the Open-Apple Key and pressing the Right-Arrow Key three times to make the column 12 characters wide. Then press the Return Key.

- Now you will narrow the columns that will hold the test and homework scores. Move the cursor to any cell in column C and enter an Apple-L to invoke the Layout Command.
- Press the letter "C" for "Columns", press the Right-Arrow Key to highlight columns C through I, then press the Return Key.
- Enter the letter "C" to indicate you want to change the column widths.
- Hold down the Open-Apple Key and press the Left-Arrow Key four times to make each of the homework and test grade columns five characters wide. Then press the Return Key.
- Put the cursor anywhere in column J. Then issue an Apple-L command and repeat steps 9-11. Make columns J through L seven characters wide.

Your screen should now look like the example in *Figure 6*.

Novice Notes...

Figure 6: Sample Data after Setting Column Widths

| File: GRADEBOOK | | REVIEW/ADD/CHANGE | | | | | | | | Escape: Main Menu | | |
|-----------------|----------|-------------------|----|----|----|----|----|----|----|-------------------|--------|------|
| A | B | C | D | E | F | G | H | I | J | K | L | M |
| 1 | Last | First | 1 | 2 | 3 | 1 | 2 | 3 | 4 | Tests | Homewk | Avg. |
| 2 | Name | Name | | | | | | | | | | |
| 3 | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | |
| 5 | Franklin | Benjamin | 90 | 90 | 90 | 70 | 70 | 70 | 70 | 99.9 | 99.9 | 99.9 |
| 6 | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | |
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| 17 | | | | | | | | | | | | |
| 18 | | | | | | | | | | | | |

A1
Type entry or use ⌘ commands ⌘-? for Help

Then press the Space Bar once and type "Tests". That will center the word "Tests" over the three columns that will store the test grades.

3. Move the cursor to cell G2 and type "Homework". This will center the word "Homework" over the four columns that will store the homework grades.
4. Move the cursor to cell J2 and type a quotation mark to indicate you want to enter a label. Then press the Space Bar three times to insert three spaces and type the word "Average".
5. Put the cursor in cell L2 and type the word "Weight". Then right justify this label by typing an Apple-L, selecting "Entry", typing an "L" for "Label format", and typing an "R" for "Right justify".

You built the spreadsheet too close to the top of the AppleWorks screen; there is no room for a heading at the top of the page. Next, you will insert blank rows to accommodate additional information at the top of the screen.

6. With the cursor in any cell in row 1, issue an Apple-I (Insert) command. Enter the letter "R" to signify you want to insert rows and tell AppleWorks to insert three rows.

7. Type the label "Semester:" in cell A1 and type the label "Class:" in cell A2. When you use this template to store real data, you will enter the appropriate semester and class information into cells B1 and B2.
8. Issue an Apple-S command to save your work on an AppleWorks data disk.

Your gradebook should now look like the example in *Figure 7*.

Figure 7: Gradebook at the End of this Lesson

| File: GRADEBOOK | | REVIEW/ADD/CHANGE | | | | | | | | Escape: Main Menu | | |
|-----------------|-----------|-------------------|-------|----|----|----------|----|----|---------|-------------------|--------|------|
| A | B | C | D | E | F | G | H | I | J | K | L | M |
| 1 | Semester: | | | | | | | | | | | |
| 2 | Class: | | | | | | | | | | | |
| 3 | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | |
| 5 | Last | First | Tests | | | Homework | | | Average | | Weight | |
| 6 | Name | Name | 1 | 2 | 3 | 1 | 2 | 3 | 4 | Tests | Homewk | Avg. |
| 7 | | | | | | | | | | | | |
| 8 | Franklin | Benjamin | 90 | 90 | 90 | 70 | 70 | 70 | 70 | 99.9 | 99.9 | 99.9 |
| 9 | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | |
| 14 | | | | | | | | | | | | |
| 15 | | | | | | | | | | | | |
| 16 | | | | | | | | | | | | |
| 17 | | | | | | | | | | | | |
| 18 | | | | | | | | | | | | |

A3
Type entry or use ⌘ commands ⌘-? for Help

Completing the Labels

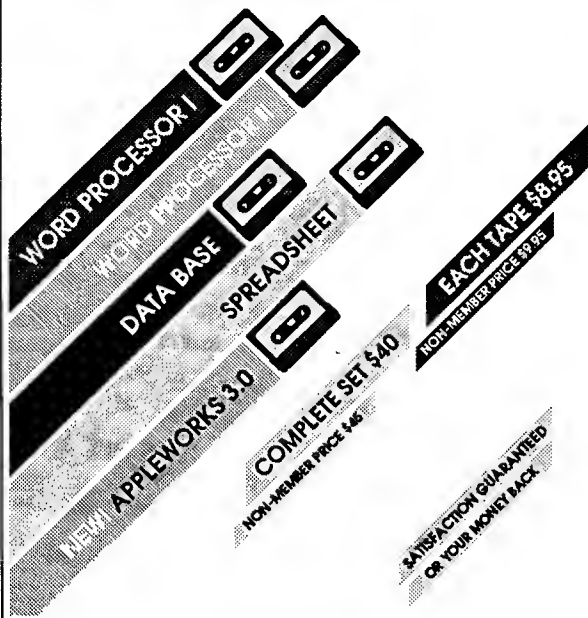
Now you will draw the line of double hyphens separating the headings from the data and will complete the labels. Follow these steps:

1. Move the cursor to cell A4 and enter a quotation mark to indicate you want to type a label. Then hold down the equals sign key ("=") until the computer beeps. Press the Return Key to enter the label. Then move the cursor to cell L4, type another quotation mark, and continue the line of equals signs. Then press the Return Key.
2. Move the cursor to cell D2 and type a quotation mark to indicate that you want to enter a label.

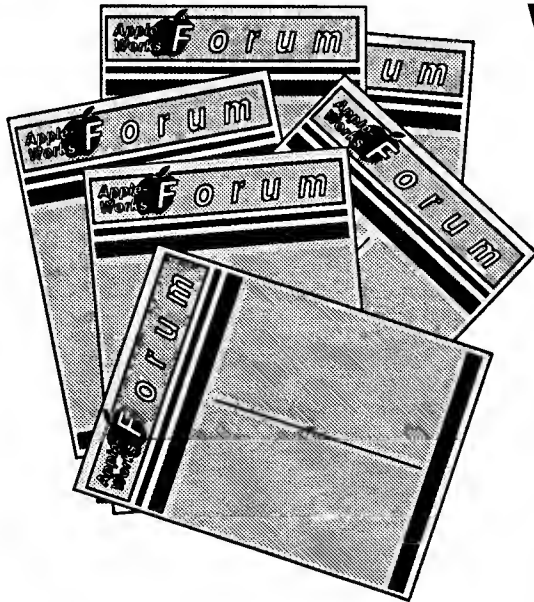
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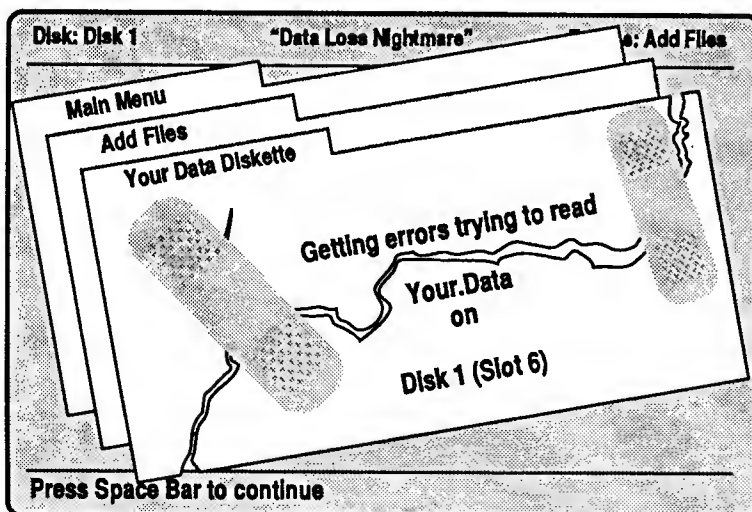


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 Table of Contents

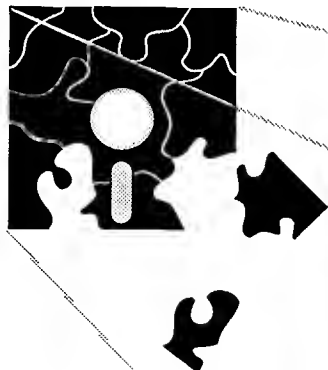
| | |
|-------------------------------------|----|
| Introduction | 1 |
| NAUG Disks | 2 |
| TAWUG Disks | 3 |
| ALUG Disks | 18 |
| SuperFonts and AppleNow Fonts | 21 |
| Leslie Vincent's Disks | 23 |
| AppleWorks Utilities | 27 |
| Other Public Domain Disks | 32 |
| Resources for AppleWorks | 38 |
| Spelling Dictionaries | 39 |
| Apple System Software | 41 |
| Order Form | 43 |

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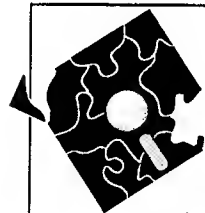
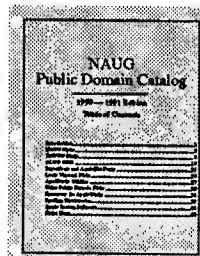
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Novice Notes...

Summary

This month we started to develop a practical spreadsheet application, a teacher's gradebook. We introduced the following concepts:

1. You can use the Arrow Keys, Apple-Arrow Keys, Apple-1 through Apple-9 Keys, the Find Command, and, in AppleWorks 3.0, the Apple-< and Apple-> Keys to navigate around a spreadsheet.
2. You should build your spreadsheets without data so they can serve as templates. You can reuse these templates whenever you need a similar application.
3. You should start with a sketch of your spreadsheet design. That makes it easier to develop the spreadsheet in the computer.
4. Labels do not have to fit in a single cell. Put longer labels in two cells, one above the other. That lets you keep the columns as narrow as possible.
5. Put different entries in separate cells. For example, do not combine first and last name in a single cell.
6. Start by entering a sample row of data and by typing the column headings. The sample data should be easy to manipulate, so you can manually verify all the spreadsheet calculations. Enter "pictures" into cells that will contain calculated values until you can develop the formulas.
7. Establish column widths as early in the development process as possible.

We also described how to use the following Apple-Key commands:

Apple-F moves the cursor to a cell or finds text.

Apple-I inserts rows or columns.

Apple-L changes column widths or cell formats.

Next month, we will continue to develop this gradebook template.

[Dr. Warren Williams is on the faculty at Eastern Michigan University where he teaches courses in the Educational Technology program. He is the President of NAUG and is a frequent contributor to the AppleWorks Forum.]

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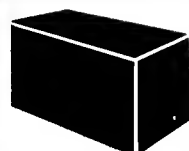
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RAMWORKS EXP.

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1 meg. 279
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5.25 Drive

800K 89
ColorLink 99

Conservor

..... 79

DataLink 2400

..... 174

DataLink Express

..... 189

FastMath

..... 139

Parallel Pro

..... 79

PC Transporter

..... 299

PC Trans. (ile kit)

..... 29

PC Trans. (GS kit)

..... 39

Phasor

..... 139

Power Supply

..... 69

RamCharger

..... 139

RamKeeper

..... 139

ReadyLink

..... 69

Serial Pro

..... 109

Slot Mover

..... 34

Sonic Blaster

..... 98

TimeMaster

..... 78

TransDrive

..... 199

TransDrive (Duo)

..... 299

TransWarp GS

..... 289

TransWarp III

..... 149

280 Plus

..... 119

KENSINGTON

Antiglare Filter

..... 39

System Saver II

..... 59

System Saver GS

..... 69

Turbo AD8

..... 115

Turbo Quad

..... 115

APPLE

AppleMouse II

..... 119

AppleMouse IIc

..... 89

Apple SCSI Card

..... 109

3.5 Dr. (IIe, II+)

..... 319

3.5 Dr. (GS, IIc+)

..... 329

ImageWriter II

..... 459

Apple Controller

(3.5, 5.25) 69

IIe Enhance Kit

..... 59

Video Overlay

..... 439

LASER

3.5 Disk Drive

..... 179

5.25 Disk Drive

..... 99

UDC

..... 49

128EX

..... 399

128EX-2 (5.25)

..... 489

128EX-2 (3.5)

..... 529

MISCELLANEOUS

AMR 5.25

..... 144

Cables (most)

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..... 99

Comp. Eyes GS

..... 199

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..... 6.95

Disk Holders

..... 12

Joy Sticks

..... 47

Mach II

..... 28

Mach III

..... 36

Mach IV Plus

..... 62

Mirage (mouse)

..... 39

Modems

..... 119

Mitac 2400

..... 119

Supra 2400

..... 119

Cables

..... 12

Monitors

..... 99

12" Amb./Grn.

..... 289

Magvix. RGB

..... 529

Sony KV1311

..... 329

1180

..... 199

Panasonic Printers

..... 449

1624

..... 249

1191

..... 329

1124

..... 199

Printer Interfaces

..... 94

Fingerprint GSi

..... 89

Fingerprint Plus

..... 59

Fingerprint SS

..... 59

Fingerprint G+

..... 84

Grappler 9 Pin

..... 78

SuperWriter

..... 54

SMT

..... 199

Quickie Scanner

..... 39

IIe, IIGS

..... 159

SMT No Sit Click

..... 159

Thunderscan

..... 159

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How to Improve the Output from Your ImageWriter

by Cathleen Merritt

Over the past six months, NAUG has received an increasing number of letters from members who are getting unsatisfactory output from their ImageWriter printers. The members describe printouts with misshapen characters constructed of incorrectly spaced dots, like the example in *Figure 1*. The problem is erratic and is not repeatable; different characters are affected if you print the same document a second time.

This problem is often caused by sticking pins in the ImageWriter printer head. Here is how to clean and lubricate the pins using WD-40, a lubricant available from most hardware stores.

Proceed as follows:

1. Remove the ribbon from the printer.
2. Remove the print head. The ImageWriter I print head is held in place by a metal clip below and to the right of the print head (see *Figure 2*). (Early ImageWriter I printers have two metal clips, one on each side of the print head.) Slide the clip(s) away from the print head. Grasp the print head and wiggle it from side to side as you pull it out of its slot.

Figure 1: Sample ImageWriter Printout

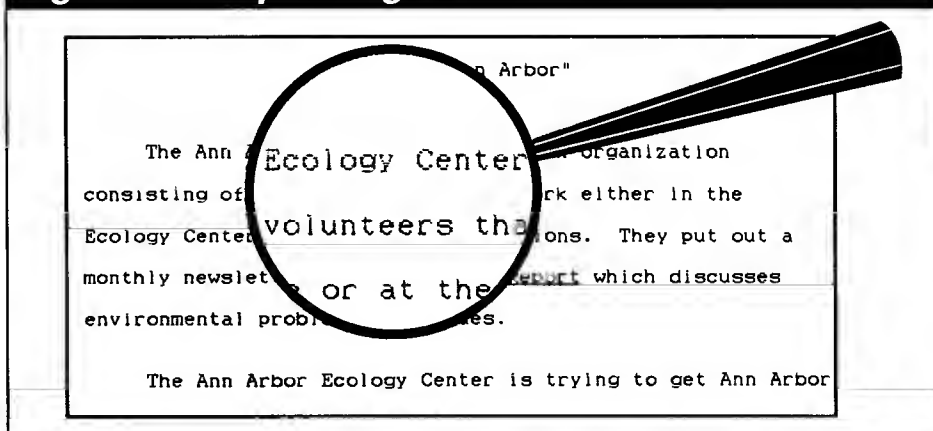


Figure 2: ImageWriter I Print Head

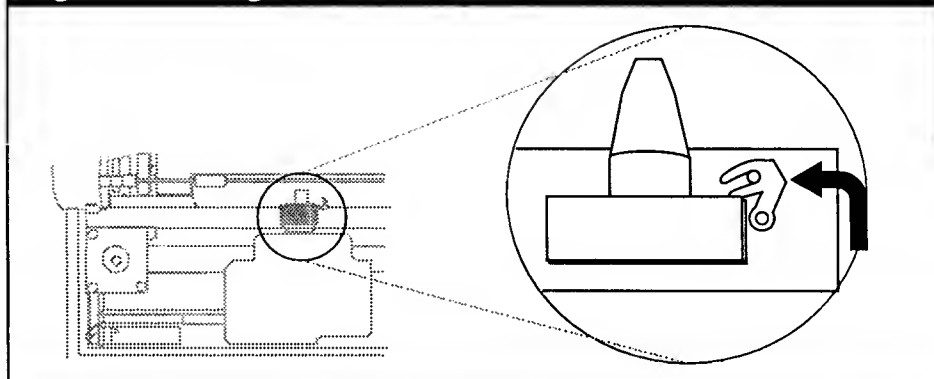
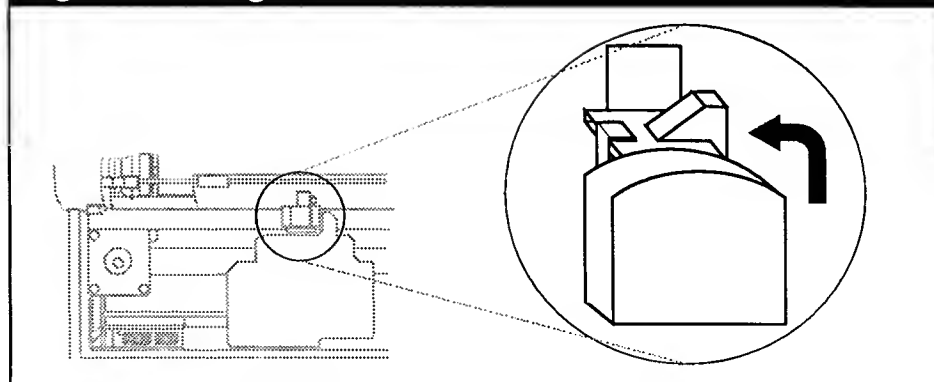


Figure 3: ImageWriter II Print Head



Printer Primer...

The ImageWriter II print head is held in place by a white plastic clip (see *Figure 3*). Press the clip to the right and wiggle the head out of its slot.

3. Moisten a Q-tip with WD-40 and clean the ink from the portion of the head that contacts the ribbon. I think you will be surprised by how much ink you remove from the print head.
4. Hold the print head with the pins pointing straight up and put a drop of WD-40 on the pins. Wipe off any extra with a paper towel. Hold the head in position for a minute or so as the WD-40 works its way down the pins.
5. Replace the print head and ribbon. Then print a page or two to exercise the newly lubricated pins.

While there are no guarantees, this WD-40 trick quickly solved the problems we were having with NAUG's ImageWriter.

[Cathleen Merritt is the Director of NAUG and is the Editor of the AppleWorks Forum.]

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Quick Tip

Turn Off Print Buffering

by Kent Hayden

If you run AppleWorks on an Apple IIGS, make certain that the print buffering option is set to "off". Failure to do this can cause problems with AppleWorks, particularly when you try to perform a mail merge. The most noticeable problems occur when you try to print with TimeOut SuperFonts.

To check the print buffer setting on a IIGS, issue an Apple-Control-Escape to get to the Desk Accessories Menu, select the Control Panel option, and then choose "Printer Port" from the Control Panel Menu. You will find the buffering option on this menu.



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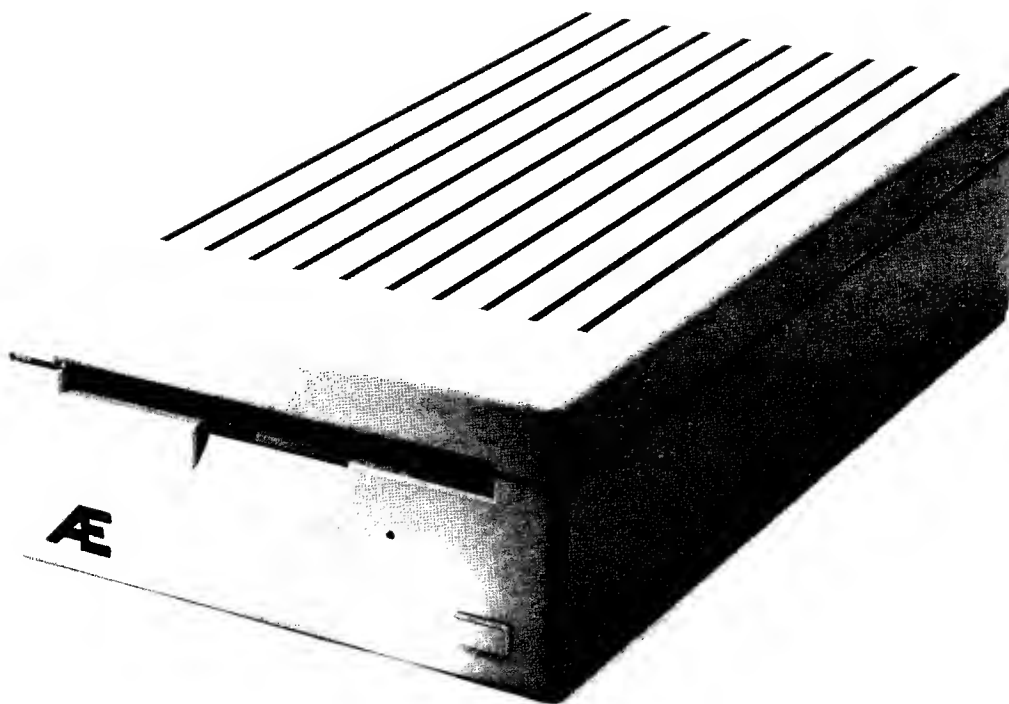
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AppleWorks GS 1.1 Review — The Word Processor

by John Link

This is the second in a series of articles that review the newest version of AppleWorks GS. This month, John Link evaluates the program's word processor module. The author assumes you read the review of the earlier version of AppleWorks GS in the January 1989 issue of the AppleWorks Forum and the first article in this series which described the improvements Claris made to the fundamental operation of AppleWorks GS.

The word processor in AWGS 1.1 is a powerful, feature-packed module. The program offers a what-you-see-is-almost-what-you-get screen display that shows your document in the fonts you select with the correct space between characters (including proportional spacing with full justification), correct spacing between lines, and all the styles such as boldface, underlining, and italics that you use in the document. Like earlier versions of AWGS, version 1.1 includes a built-in spell checker with an 80,000 word dictionary and a capable thesaurus.

Claris made some significant enhancements to the word processor in the new version of AWGS. For example, AWGS 1.1 lets you select any font in the */SYSTEM/FONTS directory on the boot disk. (Earlier versions of AWGS limited the number of fonts you could access from the program.) You change fonts by highlighting the text you want to alter and choosing the new font from the Font Menu on the Menu Bar.

AWGS 1.1 lets you select any size font from 4 points to 72 points in increments as small as a single point. You can mix any combination of fonts, sizes, and styles in a document. The program automatically adjusts centering, tabbing, indenting, line spacing, pagination, and justification each time you change fonts or type size.

AWGS 1.1 supports full justification with proportional fonts and implements that feature with "micro-justification", a technique that adds a

minute amount of space between letters and words, instead of using the coarser add-whole-spaces-between-words method employed by AppleWorks Classic. In addition, AWGS adjusts the space between each line of text according to the characteristics of the font you choose. For example, when you use Palatino, AWGS prints fewer lines per page than when you print with Times. This is because the ascenders and descenders in Palatino are more exaggerated than those in Times, so the program increases the inter-line spacing to maintain proportional spacing between lines on the printed page.

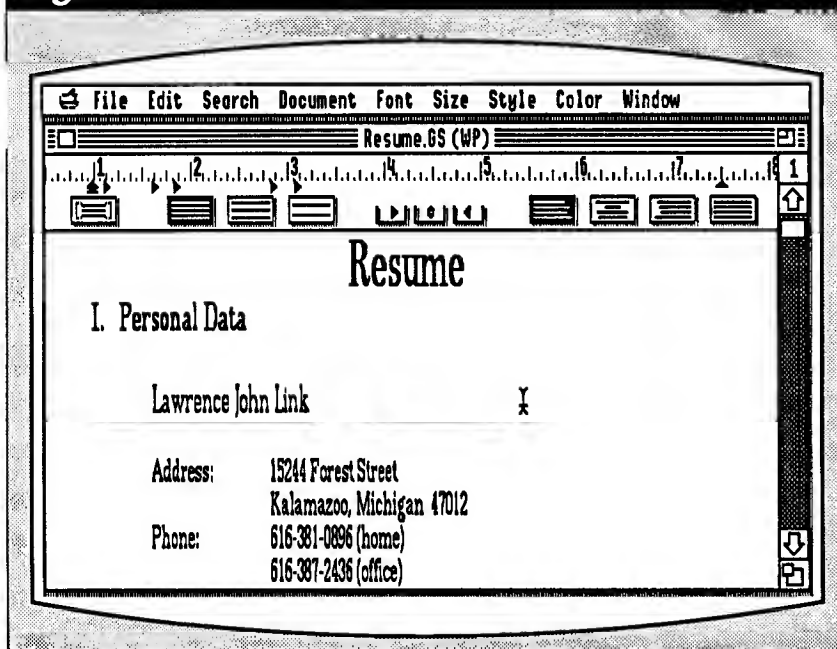
The result of the approach used by AWGS for justification and line spacing is output which looks more professional and sophisticated than that available from AppleWorks Classic, regardless of whether you print with a dot matrix printer or a LaserWriter.

Speed

Admittedly, many of these formatting features were available in earlier versions of AWGS. However, the greatly enhanced performance and reliability of version 1.1 makes the day to day use of this module more practical. Unlike earlier versions of AWGS, the new release accepted keyboard input at my highest typing speed without losing characters. Most of the time I was impressed by the speed of this feature-laden program, which performs complex operations at speeds which compare favorably to MacWrite running on a Mac Plus.

The one exception occurred when I copied a single

Figure 1: AWGS Word Processor Screen



line of text to the clipboard and pasted it into the middle of a very large and heavily reworked document. I didn't time how long it took for AWGS to complete this operation, but I was able to feed my macaw, clean his water dish, and prepare a sandwich for myself while the AWGS "beach ball" spun merrily away on the screen. The delay occurred each time I attempted a cut and paste in this large file. My advice is that users with weight problems should stay away from their refrigerators when performing cut and paste operations on large documents.

In all other instances, the AWGS word processor was fast and responsive, granted the limitations inherent in the desktop metaphor. I consider its speed "very good".

Reliability

I was pleasantly surprised by the reliability of AWGS 1.1, particularly after my experience with earlier versions of the program.

I tested AWGS' word processor on documents of different lengths, including a 360K AppleWorks Classic word processor file I imported into AWGS. I spent more than six consecutive hours modifying this lengthy document without encountering a single destructive bug while I made innumerable changes to its text and format.

Earlier, I had experienced occasional lock-ups and memory conflicts when working on other documents. However, I believe these problems were caused by GS/OS, not by AWGS; I experienced similar difficulties when running AppleWorks Classic with GS/OS active in my computer. Many of the lock-ups occurred after I invoked the text-based Classic Desk Accessory Menu (Apple-Control-Escape) from within AWGS, which is something I now avoid. In any case, users should back up their word processor work frequently.

Functionality

AWGS is Macintosh-like in its operation. On the screen, the program looks much like any one of many Macintosh word processors with pull down menus, ruler lines, and formatting options at the top of the screen (see Figure 1). The Macintosh metaphor is not for everyone; there are times when it seems tedious and moronic. Some AppleWorks Classic users may never become comfortable with its reliance on the mouse and its use of the black-on-white display (which some find harder on the eyes than the inverse display used by AppleWorks Classic and most other ProDOS 8 word processors).

Although I usually prefer the uncluttered and instantly responsive AppleWorks Classic interface, the broad acceptance of Macintosh word processors convinces even this dyed-in-the-wool AppleWorks user that this is ultimately a matter of personal preference. Undoubtedly, some IIGS owners will eventually prefer the mouse-based interface in AWGS for all their word processing. Others, myself included, will find both approaches acceptable, and use either AWGS or AppleWorks Classic, depending upon the nature of the job at hand or their mood of the moment. One of the strengths of the IIGS is its ability to support both interfaces.

Once you learn the desktop style interface, the different features available in the program perform as advertised. I was able to use the AWGS word processor to create heavily formatted documents of much greater visual complexity and richness than

AppleWorks GS...

any document I have ever created with AppleWorks Classic.

The spell checker built into AWGS is competent and easy to use. The program operates in the classic Macintosh fashion by displaying each word it cannot recognize in a graphic dialog box (see Figure 2). You point and click to indicate whether to ignore or correct the word, with additional pointing and clicking to execute any corrections. This approach is slower than the system used in AppleWorks 3.0, which lets you select the words to change from a list, or presents each word in context using the much quicker text screen. However, the AWGS spell checker does an excellent job of offering suggested spellings for words; those suggestions are generated somewhat faster than in AppleWorks 3.0. In addition, the AWGS spell checker examines proper nouns for correct capitalization and flags words that are incorrectly hyphenated (e.g., AWGS flags “re-enter” when the correct spelling is “reenter”).

Serious writers and teachers will appreciate the thesaurus built into the AWGS word processor. Unlike TimeOut Thesaurus for AppleWorks Classic, AWGS' thesaurus offers definitions for each word it suggests (see Figure 3). I find this extremely useful, since the most elegant use of a thesaurus is not just to find a different word, but a better word as well. Seeing the definitions facilitates the thought process and is worth the wait required by the program's mouse-based dialog.

Ease of Use

It is tempting to begin using AWGS without reading the manuals. Nonetheless, new users should approach AWGS as a new product, unless they are very familiar with the Macintosh metaphor. The ease of use associated with the desktop interface conceals much of the power in this program. If you do not read the documentation, it is possible to type

Figure 2: AWGS Spell Checker

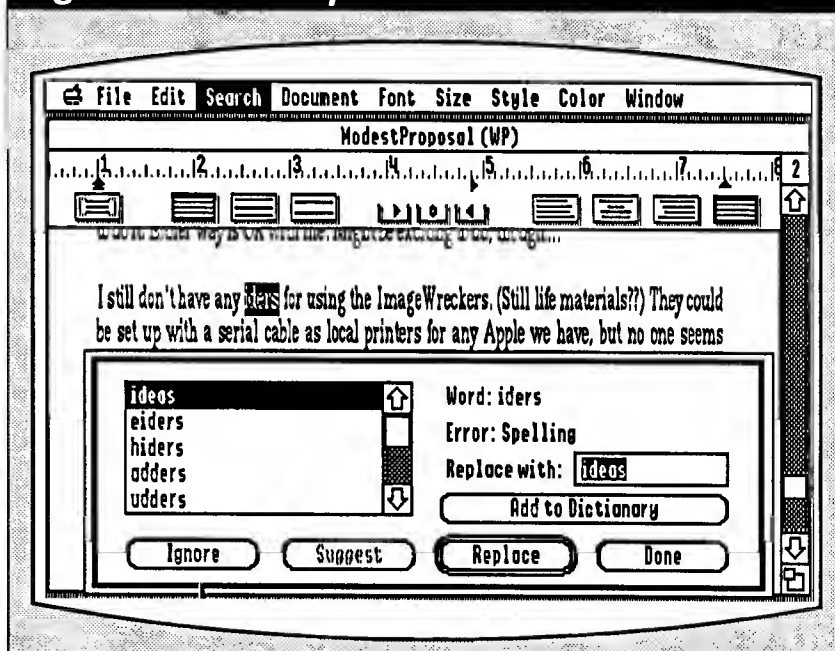
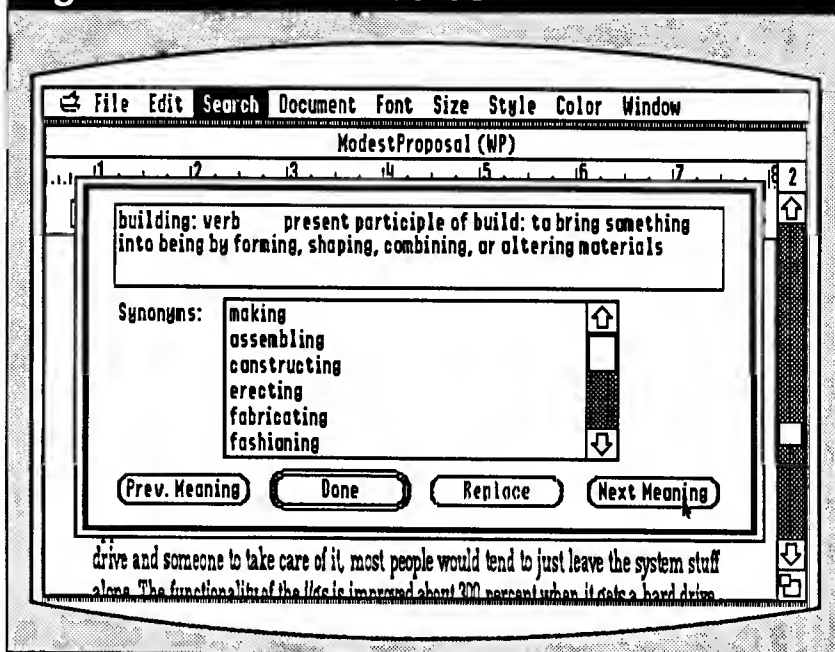


Figure 3: AWGS Thesaurus



a long document, check its spelling, and print acceptable hard copy, without ever realizing the numerous enhancements you could use in your project. Those who insist on learning by trial and error may never discover many of the features offered by this powerful program.

The differences between AWGS and AppleWorks Classic are particularly evident when you try to manipulate the margins and generate indented

Tips for Using the AppleWorks GS Word Processor

Here are three suggestions that can enhance your productivity with AWGS' word processor module:

1. If you do not like AWGS' mouse interface or black-on-white text display, consider doing your writing in AppleWorks Classic and importing your files into AWGS. That gives you the best of both worlds; the speed and keyboard convenience of AppleWorks Classic and the formatting capability of AWGS. However, enter only a single space after each period as you type. AWGS does not handle two spaces after a period correctly.
2. If you do your writing in AWGS, consider using the Courier font while you write. Courier is a non-proportional font that you probably will not use for your final output. However, the greater inter-letter spacing in Courier makes it easier to place the insertion bar between letters when you edit the document. After you are done writing, use the Select All command from the Edit Menu (or issue a Command-A) and change the document to a proportional font.
3. Do not let AWGS' formatting power interrupt the creative process of writing. I suggest that you enter the text of your document with little thought to the appearance of the final output. Then go back and format the document. That gives you a chance to review your writing and enhance the output without interrupting the flow of ideas as you work.

—Warren Williams

paragraphs. Once you know what to do, the procedures are easy, but not self-evident.

If you follow my suggestion and read the documentation, I consider the ease of use of the AWGS word processor to be "excellent". Try to learn the program without any help, and ease of use declines to "satisfactory" or less, depending upon how much you know about the desktop interface.

Concerns

No program is perfect, and AWGS is not an exception to this rule. I have two minor concerns about the

word processor module. First, I wish the program offered automatic hyphenation, which would significantly enhance the quality of the fully justified output available from AWGS. Second, you cannot insert two spaces after a period when you use AWGS. If the second space does not fit on the current line, it wraps to the beginning of the next line and is not deleted during the printing process. While it is true that correct style is to insert only one space after a period when you use a proportionally spaced font, many of us insert two spaces because of our experience with mono-spaced typewriters. This will produce uneven left margins with AWGS.

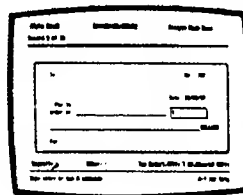
Summary

I am impressed by the word processor module built into AWGS. It is fast, easy to use, and offers impressive output, particularly from a laser printer. (Documents printed from AWGS on a laser printer are virtually indistinguishable from the laser output produced by most Macintosh word processing programs.) I highly recommend AWGS 1.1's word processor to users who like the what-you-see-is-almost-what-you-get screen, the easy to learn, mouse-based operations, or those who need sophisticated formatting in their documents.

Next month I will examine AWGS 1.1's page layout module.

[John Link is a Professor of Art at Western Michigan University. He is the developer of SuperPatch and is an AppleWorks consultant.]

CHECK IT OUT



A CURE FOR BILL PAYING HEADACHES ... Inside AppleWorks a check like interface permits entry of data plus financial and tax reporting. It prints any type personal, business or Quicken checks. Alpha Check loads through its own menu or Beagle Bros. timeOut system (Read about us in the May inCider pg. 48).

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19700 Wells Dr., Woodland Hills, CA 91364

An Enhanced Word Processor Marker System

by William Neef

AppleWorks' word processor lets you set a "marker" anywhere in a document. You can use these markers to make it easy to jump between sections in a large document or to find text you want to complete at a later date. While you rarely need more than one or two markers in a document, AppleWorks lets you maintain up to 254 different markers in every file.

TimeOut UltraMacros includes two default macros (<sa-M> and <sa-G>) that automatically set and find marker number 254. Since those macros always create and go to marker 254, the <sa-M> and <sa-G> macros do not give you full access to AppleWorks' marker system.

Steven Brecker-Cooper of Cambridge, Massachusetts developed a pair of macros that let you specify the marker you want to set or find in a document. Those macros appear in *Figure 1*.

The macros let you enter a number and then wait for you to press the Escape Key before continuing. I am normally in the "zoom-out" (hide print options) mode, so I prefer Mr. Brecker-Cooper's approach which lets me see the marker location on the screen before I press the Escape Key. And his approach also lets me find the next marker in the <sa-G> macro. However, you can modify both macros so they automatically return to the word processor document.

[Submit your favorite macros to "My Favorite Macro", NAUG, Box 87453, Canton, Michigan 48187.]

[William Neef is a retired purchasing agent for Welding Metals, Inc. He is Treasurer of the Apple Jackson Users Group in Jackson, Michigan.]

Figure 1: Macros that Set and Find a Marker

| | | | |
|----------------|---|----------------|--|
| M:<awp><oa-O | { Define the Set Marker macro and go to the Options Menu. } | G:<awp><oa-F | { Define the "Go To" macro and issue a Find Command. } |
| >SM<rtn>254< | { Invoke Set Marker option and enter value 254 as the default. } | >M254< | { Choose Find Marker 254 from the Find Menu. } |
| A=key | { Pause, then store the ASCII value of next key pressed in A. } | A=key | { Pause, then store the ASCII value of next key pressed in A. } |
| | { Store successive digits if more than one number } | | { Store successive digits if more than one number } |
| | { key is pressed. } | | { key is pressed. } |
| if A=13 | { If A is ASCII value of the Return key... } | if A=13 | { If A is ASCII value of the Return key... } |
| then rtn stop | { ...accept the default of Marker 254. Stop the macro. } | then rtn stop | { ...accept the default of Marker 254. Stop the macro. } |
| else esc | { If A is not the ASCII value of Return, then press the Escape } | else esc | { If A is not the ASCII value of Return, then press the Escape } |
| | { Key to enter the marker. } | | { Key to enter the marker. } |
| B=A-48 | { Store the value of the key pressed, minus 48 in B. } | B=A-48 | { Store the value of the key pressed, minus 48 in B. } |
| | { This stores the actual value of the number key pressed. } | | { This stores the actual value of the number key pressed. } |
| if A=27 | { Check if the user pressed the Escape Key. If they did... } | if A=27 | { Check if the user pressed the Escape Key. If they did... } |
| esc esc stop | { ...escape from Print Options and stop the macro } | esc stop | { ...end the macro without completing the Find. } |
| | { without setting a marker. } | | |
| else print B>! | { If user did not press Escape, accept the value entered... } | else print B>! | { If Escape was not pressed, go to marker number specified } |
| | { ...and wait for the user to press Return to accept the value. } | | { and await an answer to "Find next occurrence?" } |

News of Interest to AppleWorks Users

Apple Computer

New SCSI Card: Apple Computer recently announced the release of its new Apple II High-Speed SCSI Card, an interface card that connects SCSI hard disks and other peripheral devices to Apple IIe and IIGS computers. Apple claims that the new product transfers data up to ten times faster than earlier versions of the card. The difference is particularly noticeable with large programs that require lengthy disk accesses (e.g., AppleWorks GS) and becomes less significant with shorter programs and files. (AppleWorks "Classic" users who preload all the AppleWorks modules should notice slightly faster loading times, but little change in performance thereafter.)

The new card provides faster data transfer because it transfers data directly between the computer's memory and a storage device with minimal interaction with the computer's microprocessor. Apple claims data transfer rates of one-megabyte per second using the card with Apple IIGS computers and half that speed with Apple IIe computers.

According to Apple, the new SCSI card supports as many as seven peripherals and includes an on-board terminator that simplifies hardware setup. The card includes drivers and utility programs for hard disk and CD-ROM drives, and improved utility programs for hard disk management. For example, the backup program shipped with the card can copy files with resource forks, such as the AppleWorks GS program files.

The suggested retail price of the new SCSI card remains unchanged at \$129.

New Warranty: Apple recently extended the warranty for all new Apple equipment from 90 days to one year. The new warranty applies to all Apple computers and peripherals purchased since Jan. 1. Apple also announced reduced prices for AppleCare service contracts. Through May 31, Apple owners can purchase one year AppleCare agreements at 50% of the regular price. Dealers are allowed, but not required, to charge up to \$50 to in-

spect out-of-warranty equipment prior to writing an AppleCare contract. Contact your local Apple dealer for additional information.

Beagle Bros

Beagle Bros recently announced the release of TimeOut ReportWriter 2.2. Version 2.2 includes 14 significant enhancements and some minor bug fixes for this powerful AppleWorks report generator.

ReportWriter 2.2 also includes two functions not available in earlier versions of the program. @CHR lets you send control codes to the printer. Knowledgeable users can use @CHR to print all negative numbers in red. A second new function, @RPT, lets you repeat any character as many times as you specify. One of the applications of this function is to fill the remainder of the "Amount" field in a check with asterisks.

NAUG members who purchased ReportWriter from any source can update to version 2.2 through NAUG's Beagle Buddies. See page 33 of the March 1990 issue of the *AppleWorks Forum* for details. Version 2.2 represents a significant upgrade to ReportWriter; we recommend that you upgrade to the latest version of this powerful program.

[Beagle Bros, 6215 Ferris Square, Suite 100, San Diego, California 92121; Outside California: (800) 345-1750. In California (800) 992-4022.]

Chinook Technology

Chinook Technology recently announced the release of RAM 4000, an Apple IIGS-compatible memory expansion card. According to the company, the card follows Apple Computer's standards for ROM 1 and ROM 3 IIGS systems and is compatible with the new Apple II High-Speed SCSI Card.

The RAM 4000 comes with a 30 day money back guarantee and a 5 year warranty. Costs are as follows: ØK RAM: \$74.95; 1-megabyte: \$159; 2-megabytes: \$245; 4-megabytes: \$417.

[Chinook Technology; 601 Main Street #635; Longmont, Colorado 80501; (303) 678-5544.]

EuroWorks

The S. A. AuTear Company announced the release of version 3.0 of EuroWorks, the company's enhancement that prints AppleWorks word processor files in French, German, Italian, Portuguese, or Spanish. The new release, which requires AppleWorks 3.0, runs six to twenty times faster than previous versions. EuroWorks 3.0 lets you use most print formatting options including boldface, underline, superscript, and subscript when you print foreign language output. EuroWorks 3.0 is compatible with Apple DMP, Scribe, ImageWriter I, II, and LQ, Mannesmann Tally MT85/86, and Seikosha SP-1000AP printers. EuroWorks 3.0 supports the ImageWriter II sheet feeder.

The French-only or Spanish-only editions of EuroWorks 3.0 cost \$24. The five-language edition costs \$39. Site and multi-site licenses, and AppleWorks 2.x-compatible versions of the program are also available. Registered owners of EuroWorks will receive an upgrade offer directly from the company.

[S.A. AuTear Company, Box 7459, Beaverton, Oregon 97007; (503) 645-2306.]

JEM SOFTWARE

Double Data — allows up to 60 categories in your AppleWorks 3.0 database.

Suggested retail price: \$30.00

Mr. Invoice — inventory control and invoice writer for your small business utilizing the AppleWorks 3.0 functions.

Suggested retail price: \$40.00

Ask Charlie's AppleSeeds about the NAUG discount on these fine Jems.

Also available from Roger Coats and Programs Plus.

AppleWorks GS 1.1 Upgrade Offer

Clarix Corporation recently expanded its special NAUG upgrade offer to include AppleWorks GS 1.1, the improved version of the company's powerful, Apple IIGS-specific integrated program.

Until May 31, NAUG members who cannot locate their original AppleWorks disks can upgrade to AppleWorks GS 1.1 for \$129, and/or upgrade to AppleWorks 3.0 for \$99 (plus \$3 s/h).

The conditions of this offer follow:

1. Purchase is by credit card only. Clarix cannot accept checks, money orders, purchase orders, or other forms of payment for this special offer.
2. Call (800) 628-2100, request extension 61, and identify yourself as a NAUG member. You will need your NAUG member number.
3. Orders can be shipped only to addresses in the United States. Members from other countries should contact their regional Clarix distributor for information about current upgrade policies.

Standard Clarix AppleWorks Upgrades

These offers are for members who cannot locate their original disks. If you have original AppleWorks or AppleWorks GS disks, consider the following standard Clarix upgrade alternatives:

1. Upgrade from any version of AppleWorks GS to AppleWorks GS 1.1 for \$29 (plus \$3 s/h). (If you use AppleWorks GS, you should upgrade to version 1.1; this is a dramatically improved version of the program.)
2. You can upgrade from AppleWorks "Classic" to AppleWorks GS for \$99 (plus \$3 s/h).
3. You can upgrade from any version of AppleWorks "Classic" to AppleWorks 3.0 for \$79 (plus \$3 s/h).

Contact Clarix at (800) 544-8554 to exercise any of these regular upgrade alternatives.

Latest Additions to NAUG's Library

by Brian Theil

NAUG recently added the following disks to its Public Domain Library:

RamDisk Tutor

RamDisk Tutor is a set of tutorials that describe how to configure an Applied Engineering memory card to work as a RAM disk with AppleWorks 3.0. The tutorials are easy to understand and include step-by-step procedures for owners of 5.25-inch and 3.5-inch systems. Steve Ellis, author of the tutorials, includes separate directions for TimeOut owners.

You need an Applied Engineering bank switched memory card such as a RamWorks, Z-Ram, or RamExpress card and the following software to use this disk: AppleWorks 3.0, the AppleWorks 3.0 Patch Disk (available from the NAUG Public Domain Library), SpellCopy (from JEM Software), Applied Engineering's Super DeskTop Expander or AW2 Expander, and a disk/file copy program.

The RamDisk Tutor disk also includes Selector/RamBack. Selector displays a menu when you want to change between applications. RamBack recovers the RAM disk if your system locks up, if you warm boot your computer to change operating systems, or if you run a copy-protected program.

Mr. Ellis requests a donation of \$1-\$5 if you find the tutorials or programs on this disk useful.

NAUG recommends these tutorials to anyone who wants to use a portion of an Applied Engineering memory card as a RAM disk with AppleWorks 3.0.

Macro Library Integrator 3.0

Ira Lieberman recently developed an AppleWorks 3.0-compatible version of his popular Macro Library Integrator (MLI). MLI 3.0 includes documentation and more than 120 macros collected in "Libraries". You use the macros in any Library to establish a working environment for a particular application. You can add your own macros to the

existing libraries or establish a new library for your personal collection of macros. Advanced macro programmers will also appreciate the sophistication of the macros on the disk.

The Macro Library Integrator 3.0 requires AppleWorks 3.0 and TimeOut UltraMacros 3.1 or later. Macro Library Integrator 2.0 is still available for users of AppleWorks 2.0 or 2.1; specify which version you want when you order.

TAWUG Disks

The AppleWorks Users Group (TAWUG) of Denver, Colorado is a clearing house for AppleWorks public domain templates. John Denzer recently abstracted the best of the files from TAWUG disks 34-52 and organized them on disks called TAWUG Business 02, TAWUG Home Finance 02, TAWUG Household 02, and TAWUG School 02.

TAWUG Business 02 contains six data base templates that schedule personnel and jobs, record travel expenses, record airline mileage, maintain an appointment schedule, and produce invoices and order forms. One data base on the disk includes the names and addresses of 250 publishers who pay for articles and stories.

TAWUG Business 02 also contains 22 spreadsheet templates including a payroll register, purchase journal, sales journal, cash payments journal, receipts journal, and a general journal. Other files provide an analysis of a business's break even point, billing templates for merchandise, billing templates for consultants and contractors, depreciation calculators, net present value calculators, and stock portfolio trackers. The disk also includes a complete management system for Amway distributors.

TAWUG Home Finance 02 includes five data base and 26 spreadsheet templates to help with financial matters around the home. Templates help you keep track of credit cards and expenditures, track invest-

Public Domain Update...

ments, maintain a checkbook, keep track of your personal property, compute loan amortizations, maintain budgets, record certificates of deposit and mutual fund investments, keep income tax, medical, and stock price records, compare mortgages and loans from different banks, project retirement income, maintain newspaper delivery route finances, and record income and deductions.

TAWUG Household 02 includes ten data base and five spreadsheet templates that help you maintain names and addresses, plan a home garden, keep track of your books and periodicals, locate magazine articles, find videotapes in your collection, compute the number of days between two dates, determine mortality rates for different groups, record information about your pet, determine the effects of snacking on your weight, play football trivia, and print envelopes. A separate data base file on this disk includes the area codes for 129 cities and regions throughout the country.

TAWUG School 02 includes 11 data base files, 11 spreadsheet templates, and eight word processor documents that are helpful to educators. Files on this disk include the complete Dolch Sight Vocabulary Word List, a list of metric conversions, a data base of spelling words and definitions, and templates that produce certificates, provide geographic and demographic information about each state, serve as a multi-function calculator, produce graph paper, make flash cards for teaching multiplication tables, record student grades, track football plays and statistics, compute least squares and multiple regression equations, discuss nuclear war, present commonly used science words, print a student enrollment form, and present humorous "rules" and "laws".

TAWUG recently raised the standards for files it includes on its disks, so NAUG now distributes complete TAWUG disks starting with TAWUG 53/54. Each disk contains more than 30 files and templates, but the list of files is too long to publish here. Of special note are the following:

TAWUG 55/56 includes expense, income, and summary templates for farming operations.

TAWUG 61/62 includes a complete single entry accounting system and 11 templates for professional photographers.

TAWUG 67/68 includes AppleWorks utility programs that replace data in files, split AppleWorks files into smaller sections, and remove carriage returns from a text file.

A complete list of the contents of each TAWUG disk appears in NAUG's new 1990-91 Public Domain Catalog (see below).

Disk Availability/Prices

All disks are available from NAUG in both 5.25-inch (\$4) and 3.5-inch (\$6) format plus \$2 s/h *per order*. Foreign orders: Credit card only; foreign shipping additional (indicate surface or air mail delivery).

Public Domain Catalog

NAUG's recently published 1990-91 Public Domain Catalog describes all 94 disks in NAUG's Public Domain Library. The 44-page catalog costs \$5, including first class postage (foreign air mail postage is \$3.00 additional) and includes a \$2 discount coupon valid on your first order of public domain disks. Order from Public Domain Catalog, NAUG, Box 87453, Canton, MI 48187.

Mastering the Magic of Macros

- A user's guide to UltraMacros™ with AppleWorks™
by K. Bernhard and H. Heidtman

A complete text on disk — with step-by-step examples. All you need to use, customize, and enjoy UltraMacros with AppleWorks.

Chapters include information on:

- system setup
- learning new macros
- creating a "turnkey" file
- enhancing AppleWorks with macros
- creating and using "task files," and more.

Chapters are AppleWorks word processing files, ready to read or print. Most chapters contain sample macros which can be transformed into working macros using "cut & paste" techniques. A note to educators: Because this text is on disk, descriptions, examples, tables, figures, and sample files can be adapted for workshops and seminars.

Ideal for new users of UltraMacros.

A valuable resource for experienced UltraMacros users.

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Bowling Green, OH 43402

Help with Hardware and Printers

by Nanette Luoma

Each month, the *AppleWorks Forum* lists the member-volunteers who offer technical support for AppleWorks products. This month's list identifies the volunteers who can answer questions about hardware and printers. Next month's issue will contain a list of members who offer help with Apple IIGS hardware and software, including a list of members who offer technical support for AppleWorks GS.

Hardware/Printers

How to Use This List

To the left of each volunteer's name are numbers indicating the utilities the consultant supports. Volunteers are listed alphabetically by state.

- | | |
|------------------------|----------------------|
| 1 = Apple II+ | 8 = Interface cards |
| 2 = Apple III | 9 = RamWorks Cards |
| 3 = Apple Memory Cards | 10 = TransWarp Cards |
| 4 = Checkmate Cards | 11 = RamFactor Cards |
| 5 = Floppy Disks | 12 = RAM Disks |
| 6 = 3.5-inch Disks | 13 = Laser Computers |
| 7 = Hard Disk Drives | 14 = Laser Printers |

| | | City | Home | Work |
|----------------|----------------|--------|--------------|--------------|
| Alabama | | | | |
| 1,5,6 | Norma Gradwohl | Mobile | 205-343-4905 | 205-343-4905 |

| | | | | |
|----------------|-------------|----------|--------------|--------------|
| Arizona | | | | |
| 8 | Clay Evitts | Tucson | 602-885-9789 | 602-296-5491 |
| 13 | Bill Holmes | Chandler | 602-849-4841 | 602-786-7170 |

| | | | | |
|-------------------|--------------------|----------------|--------------|--------------|
| California | | | | |
| 6-9 | Dan Balsley | San Ramon | 415-829-5085 | |
| 6,7 | Rolf C. Freerks | San Pedro | 213-833-8266 | 213-337-1333 |
| 5-10,12 | Terence P. Higgins | Hayward | 415-887-7499 | 415-887-7499 |
| 1,5-7,9,12 | James P. Davis | Hayward | 415-489-7024 | |
| 4,5,14 | Wayne Kliman | Santa Barbara | 805-967-3620 | |
| 5-8,11,13 | Berenice Maltby | Corona del Mar | 714-640-7369 | |
| 5-7, 11,12 | Will Nelken | San Rafael | 415-459-0845 | 415-456-1795 |
| 7 | Jesus Orosco | Milpitas | 408-270-1011 | 408-945-4344 |

| | | | | |
|-----------------|------------------|-----------|--------------|--------------|
| Colorado | | | | |
| 5,6,12 | Gary P. Armour | Littleton | 303-933-9493 | 303-972-4665 |
| 8,9 | Lyle Graff | Littleton | 303-794-5970 | 303-977-4557 |
| 5,8 | John Loren | Littleton | 303-978-0603 | |
| 5 | Dr. Larry Thaele | Boulder | 303-939-9072 | 303-492-2717 |

| | | | | |
|--------------------|-----------------|---------|--------------|--------------|
| Connecticut | | | | |
| 5,6 | William Delaney | Enfield | 203-745-4048 | 203-749-8391 |

| | | | | |
|----------------|---------------------|----------------|--------------|--------------|
| Florida | | | | |
| 6,8,12 | H. Clay Bailey | Jacksonville | 904-744-2499 | 904-725-3477 |
| 3,6,8 | Michael R. Childers | Hollywood | 305-966-5475 | 305-624-2400 |
| 1,6 | Andrew Pliuka | Ft. Lauderdale | 305-525-3301 | |
| 3,5-10,12-14 | Jeff Strichard | Ft. Lauderdale | 305-587-9590 | |
| 1,3,5-9,11,12 | Mike Ungerman | Oviedo | 407-366-0060 | 407-366-0156 |

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| 3,5-7,10,12 | Robert M. Weis | Beavercreek | 513-429-4169 | 513-257-6836 |
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